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ABSTRACT

The authors discuss their replications of 2 prominent studies in the area of modeling aggressive behavior; those of Lovaas and Bandura. In the first, they predicted that, given the same socio-economic background, there would be no differences between black and white children in the amount of aggressive play subsequent to viewing an aggressive cartoon. No significant differences are shown between the experimental and control groups for either blacks or whites. The second study, in which 43 pre-schoolers were divided into 3 subject groups, varied the level of aggressive content by showing a different cartoon to each group. It was assumed that the children exposed to the most aggression would emit the most aggressive responses in a subsequent free play period. Again, no significant differences were found. The authors discuss their inability to demonstrate a previously well-documented effect. (TL)

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The Effect of Exposure to an Aggressive Cartoon on Children's Play[1]

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A series of studies by Bandura and associates (Bandura, Ross, and Ross, 1961; 1963) has indicated that children will model novel aggressive behaviors shown by a real life, film, or "cartoon" model. These studies also show that aggressive play behaviors other than the novel ones being modeled will also show an increase subsequent to the child's viewing an aggressive scene. Bandura explains this latter increase as due to social facilitation or disinhibition of aggressive responses (Bandura & Walters, 1963). Similar increases in aggressive play behaviors after viewing aggressive cartoons have been demonstrated by Lovaas (1961) and Mussen and Rutherford (1961).

Two studies will be reported here today. The purpose of the first study was to investigate the effect of socio-economic class and cultural differences stemming from racial differences on the increase in aggressive play resulting from viewing aggressive cartoons. The prediction was that, given the same socio-economic background, there would be no differences in the amount of aggressive play subsequent to viewing an aggressive cartoon between black and white children.

Study #1

Subjects: The subjects were all preschool children. All but two were four to five years of age. Two children in the white group were six years old but had not yet started first grade.

The 19 white children (nine girls and ten boys) were recruited from a neighborhood which is recognized by the community as a middle class, white, suburban one.

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The 20 black children (nine girls and eleven boys) were recruited from a Get-Set project in a neighborhood that was defined as a middle class urban black neighborhood by the Get-Set personnel.

Procedure: The procedure was modeled on the one used by Lovass (1961). The films and the dependent measure, however, differed from those used in his study.

Both the black and white groups were divided randomly into an experimental and control group. All four groups went through an identical procedure except that the experimental subjects viewed a six minute cartoon entitled "Cat Feud" which depicted a practically uninterrupted violent fight between two cats over food. The control subjects saw a seven minute cartoon entitled "Little Snowflake" which told about an elderly couple who wished so much for a daughter that Old Man Winter made one for them out of a snowflake.

Each child was taken, one at a time, into the testing room where he was shown the experimental toys. The aggressive toy was a large clown that could be operated by punching the clown's stomach which activated a bell and a response counter. The non-aggressive toy was a large clown similar to the first, that could be operated by pushing the clown's belly button which activated a bell and a response counter. The child was shown how to operate each toy and a two minute pre-measure of responding on each toy was obtained.

The child was then led into another room where he was shown either the aggressive or non-aggressive film. After viewing the film, the child returned to the testing room and a two minute post-measure of responding on each toy was obtained.

Results: The experimental measure used in the analysis of the data was a ratio score consisting of the ratio of the number of responses on the aggressive toy (AR) to the total number of responses on both toys (AR + NAR).

$$\text{Ratio Score} = \frac{\#AR}{\#AR + \#NAR}$$

These ratio scores are presented in Table 1.

Insert Table 1 about here.

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t tests show no significant differences between the experimental and control groups for either blacks or whites on post-measure scores. Nor do *t* tests show any significant differences between either experimental groups pre-measure and post-measure scores.

Study #2

Because of the inability to obtain the predicted effect of an increase in aggressive play subsequent to exposure to an aggressive cartoon, a second study was designed. Thinking that the difficulty might be in our adaptation of Lovass' procedure, we switched over to the procedure used by Bandura, et al., in their 1963 study. Our thinking was that this procedure, having been replicated a number of times, might be more reliable in giving us the predicted effect. In addition the level of aggressive content of the cartoons was varied with the prediction that children exposed to an aggressive cartoon should demonstrate more subsequent aggressive play than children exposed to cartoons of lesser aggressive content.

Subjects: Forty-three pre-school children (20 boys and 23 girls), ranging in age from 46 to 75 months, served as subjects. The children were recruited from three different pre-school programs in a suburban middle class neighborhood.

Procedure: The children were divided randomly into three groups. All three groups went through an identical procedure except that each group was exposed to a cartoon of differing levels of aggressive content. The aggressive level of a cartoon was determined by counting the number of aggressive sequences in the cartoon. Group A viewed the most aggressive cartoon, a six-minute film entitled "Cat Feud" which depicted a practically uninterrupted fight between two cats over food. Group B viewed a cartoon of intermediate aggressivity, a seven-minute film called "Lone Stranger" starring Woody Woodpecker. Group C, the control group, viewed a six-minute non-aggressive cartoon entitled "Christmas Comes but Once a Year."

After viewing the cartoon, the child was taken into a separate room where he was frustrated by being denied the opportunity to play with some highly desirable toys. The child was then allowed a 10 minute period of free play with both aggressive (gun, Bobo punching bag) and non-aggressive (tea set, cars and trucks) toys. The dependent measure was the number of aggressive responses made during the play period.

The design is essentially that used by Bandura, Ross, and Ross (1963).

Results: The mean number of aggressive responses made during the free play period by each group are presented in Table 2.

Insert Table 2 about here.

An inspection of the means shows that they are in the predicted direction. The children viewing the aggressive cartoon showed more aggressive play than the children viewing the cartoon of intermediate aggressiviry. In turn, the children viewing the cartoon of intermediate aggressivity showed more aggressive play than the children viewing the non-aggressive cartoon. However, none of the three possible differences are statistically significant. Statistical significance was determined by a Kruskal-Wallis One-Way Analysis of Variance and individual Mann-Whitney U tests.

Discussion: The authors, using two different designs, have been unable to demonstrate the well-documented effect that viewing aggressive cartoons will result in increased aggressive play in children. It is not the authors' intention to call into question the modeling or social disinhibition hypothesis. Negative results are open to a good deal of question. There are numerous reasons why the predicted effect might not have been observed. These studies did use different films and different response measures than the earlier studies.

However, the very fact that these differences in films and dependent measures could have prevented the predicted effect from being obtained is, in itself, of considerable interest. It suggests that there are possible limiting parameters of the effect and that these parameters are in need of definition and exploration.

A possible clue may lie in the fact that, although the procedure differed in both studies, the most aggressive film used in both studies was the same; i.e., the "Cat Feud." As noted, the cartoon depicts animals fighting over food. It may be that the aggression depicted in the typical animal cartoon (Bugs Bunny, Woody Woodpecker, The Road Runner, to name a few), is far enough removed from reality into fantasy that it

does not produce disinhibition of aggressive response tendencies nor result in modeling behaviors.

Bandura, Ross, and Ross (1963) report that a real-life aggressive model stimulates more aggressive play behaviors than either a filmed model or a cartoon model. It should be noted that their cartoon model was actually a filmed model dressed in a cat costume. We are presently running a study using filmed models in brief aggressive skits. These filmed skits are of the cops and robbers variety. Preliminary results suggest a strong effect on children's play with aggressive play being twice as frequent subsequent to viewing the aggressive film.

Thus, the degree of reality of the filmed materials may be one important parameter. One aspect of the degree of reality of a cartoon may be the humanoid, non-humanoid characteristics of the models. Humanoid cartoons such as Dick Tracy or The Lone Ranger may be much more likely to arouse disinhibition of aggressive responses than non-humanoid ones such as Bugs Bunny or Woody Woodpecker.

A second aspect of the degree of reality of a cartoon may be the extent to which a child might be expected to produce the modeled aggressive behaviors in his play behavior. Thus a cartoon showing punching or shooting behaviors might be expected to stimulate more aggressive play behaviors than one showing the villain being rolled over by a steam roller or dropped off a cliff. A study testing this aspect is currently underway.

A third and perhaps extremely significant factor may be the degree of humor displayed in the cartoon. Many of the animal cartoons, such as the "Cat Feud" used in these studies, while extremely aggressive, are also very humorous. Humor may nullify the reality of the portrayed aggression signifying to the child that it is clearly fantasy.

In terms of social relevance, the studies just reported suggest that considerable caution is warranted in generalizing from current studies of the modeling of film aggression to the effect of violence on television programs on the behavior of child viewers.

Table 1*

Mean Ratio Scores of Aggressive Play Obtained by Middle-class Black Children

	Experimental (n = 10)	Control (n = 9)
Pre-measure	.305	.394
Post-measure	.370	.448

Mean Ratio Scores of Aggressive Play Obtained by Middle-class White Children

	Experimental (n = 10)	Control (n = 10)
Pre-measure	.499	.366
Post-measure	.512	.360

*Based on Study #1.

Table 2*

Mean Number of Aggressive Responses

Cartoon viewed	$\bar{X}$ aggressive responses
Most aggressive Cat Feud (n = 11)	28.91
Intermediate aggressive Woody Woodpecker (n = 13)	25.69
Non-aggressive Christmas Comes But Once a Year (n = 19)	22.79

*Based on Study #2.

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